
State of California
The Resources Agency
Department of Water Resources

**Oroville Facilities Relicensing
Land Use, Land Management, and Aesthetics
Study Reports
Errata**



JANUARY 2005

**ARNOLD
SCHWARZENEGGER**
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State of California

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Secretary for Resources
The Resources Agency

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Nick Kontos, Supervising Engineer, WR

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Robert B. Cooke, Principal Engineer, Project Water Management

George T. Qualley, Principal Engineer, Project Power Management

Mark E. Andersen, Supervising Engineer, Chief, Oroville Facilities Relicensing Branch

RELICENSING TECHNICAL COORDINATORS

Christina R. Acken, Senior Engineer, WR, Cultural
Teodoro Z. Alvarez, Senior Engineer, WR, Environmental
Lori C. Brown, Senior HEPUE Utility Engineer, Engineering & Operations
James H. Upholt, Senior Engineer, WR, Recreation & Land Use/Land Management
David W. Lane, WR Engineering Associate, Web Master
Melanie D. Baillie, Associate Governmental Program Analyst, Budget
Susan M. Larsen, Staff Services Analyst, Contracts
Gary B. Lotspeich, Staff Services Manager II (Retired), Contracts

OROVILLE FACILITIES RESOURCE AREA MANAGERS

Rashid Amad, Supervising Engineer, WR, Engineering
William M. Cochran, Supervising HEP Utility Engineer, OFD Liaison
Curtis L. Creel, Supervising Engineer, WR, Operations
Stephen A. Ford, Environmental Program Manager II, Environmental
Dale Hoffman-Floerke, Environmental Program Manager I, Environmental/Recreation
Laurence Kerckhoff, Staff Counsel, OCC Liaison
James L. Martin Jr, Recreation & Wildlife Res. Advisor, Land Use
William D. Mendenhall, Supervising Engineer, WR, GIS
Janis K. Offermann, Senior Environmental Planner, Cultural
Douglas C. Rischbieter, Staff Environmental Scientist, Recreation
Terry Mills, Environmental Program Manager I, Environmental
Russell G. Stein, Senior Environmental Scientist, Environmental Document Oversight

**State of California
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**OROVILLE FACILITIES RELICENSING
LAND USE, LAND MANAGEMENT, AND AESTHETICS
STUDY REPORTS
ERRATA**

**Oroville Facilities Relicensing
FERC Project No. 2100**

This report was prepared under the direction of

Jim Martin..... Land Use Resource Area Manager, Department of Water Resources
Jim Upholt..... Relicensing Technical Coordinator, Department of Water Resources

by

Mark Greenig Senior Planner, EDAW Inc.
Steve Pavich Environmental Planner, EDAW Inc.
Nancy Bird..... Land Use Planner, EDAW Inc.

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REPORT SUMMARY

This document serves as an accompaniment to the five Land Use, Land Management, and Aesthetics Study Reports prepared for the Oroville Facilities Relicensing Collaborative. It addresses factual and significant typographical errors found in the five reports since the date each report was released to the Land Use, Land Management, and Aesthetics Work Group. Corrections to these errors are presented in a table for each report. These study errata tables specify the location of the error within the respective report (Section and page number), and the correction to the error.

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ACRONYMS AND ABBREVIATIONS

ALP	Alternative Licensing Process
CHP	California Highway Patrol
DFG	California Department of Fish and Game
DPR	California Department of Parks and Recreation
DWR	California Department of Water Resources
FERC	Federal Energy Regulatory Commission
LOSRA	Lake Oroville State Recreation Area
LULMAWG	Land Use, Land Management, and Aesthetics Work Group
OWA	Oroville Wildlife Area

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1.0 INTRODUCTION

The California Department of Water Resources (DWR) operates the Oroville Facilities, a multipurpose water supply, flood management, power generation, fish and wildlife enhancement and recreation project. The hydroelectric facilities operate under a license from the Federal Energy Regulatory Commission (FERC), which expires on January 31, 2007. Pursuant to the Federal Power Act, DWR is required to file an application for a new license on or before January 31, 2005.

During the course of the Alternative Licensing Process (ALP) employed by DWR, five land use-related studies were conducted on topics that were brought forth by the Land Use, Land Management, and Aesthetics Work Group (LULMAWG). These studies will be used by FERC to support environmental analysis and licensing decisions. Methodologies for these five studies followed Study Plans that were crafted and reviewed by the LULMAWG, and reports were produced between September 2003 and August 2004. All of these documents have been released to the public via the LULMAWG; they are also available on DWR's Relicensing Web Page <http://orovillerelicensing.water.ca.gov> and at two library collections (Oroville Branch, Butte County Library and DWR, 1416 Ninth Street, Room 525, Sacramento) compiled and maintained in support of the ALP. Since each report's release, a list of factual and typographical errors has been compiled for each report.

This document serves as an accompaniment to the five Land Use, Land Management, and Aesthetics study reports and should be referred to when reading those study reports. The following sections, one for each report, contain corrections to all known factual errors and any major typographical errors. Each section contains an errata table for one report; errata tables for each report specify the location of the error within the report (Section and page number), and the correction of the error or brief report addition. In some cases, some entries in errata tables are presented to supplement or help clarify reported information. Comments received by LULMAWG participants and other members of the public are addressed herein if they pertain to a factual error.

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2.0 STUDY REPORT ERRATA

This section of the report contains the errata for each report, with one subsection devoted to each of the five studies. In some cases, errata tables are followed by revised tables and/or text, as described in the respective errata table for that report.

2.1 STUDY L-1 – LAND USE

Table 2.1-1. Errata to L-1 – *Land Use (FINAL)*, dated July 2004.

Report Section	Page	Change
4.1 Study Design	4-1	Change “This Interim Draft Report presents the findings from Task 1. The findings for Task 2 will be reported in the Final Report.” to “This Final Report presents findings for Task 1 and Task 2 referenced in the table above.”
Table 5.3-1. Land uses in the study area.	5-18	Change (under Study Area column) <i>Commercial/Industrial: 100 acres / 0.1%</i> to <i>Commercial/Industrial: 240 acres / 0.3%</i> (See revised table following this table. Note: revised data has been shaded.)
Table 5.3-1. Land uses in the study area.	5-18	Change (under Study Area column) <i>Project Facilities: 670 acres / 0.9%</i> to <i>Project Facilities: 530 acres / 0.7%</i> (See revised table following this table. Note: revised data has been shaded.)
5.3.1.1 Urban Land Uses (Commercial/Industrial)	5-18	Change “Commercial and industrial development in the study area is limited, accounting for only 100 acres or 0.1 percent of the study area.” to “Commercial and industrial development in the study area is limited, accounting for only 240 acres or 0.3 percent of the study area.”
Figure 5.3-1a. Existing Land Use in the Study Area	5-18	Replace Figure 5.3-1a in the report with Figure 5.3-1a that follows this table.
5.3.1.1 Urban Land Uses (Project Facilities)	5-25	Change “The area classified as Project Facilities is roughly 670 acres, or 0.9 percent of the study area.” to “The area classified as Project Facilities is roughly 530 acres, or 0.7 percent of the study area.”

Table 5.3-1. Land uses in the study area.

Land Use	Project boundary		Study area ¹	
	Acres ² (approx.)	Percent	Acres ² (approx.)	Percent
Urban				
Residential	0	0.0%	1,120	1.6%
Commercial/Industrial	0	0.0%	240	0.3%
Project Facilities	410	1.0%	530	0.7%
Other Urban	80	0.2%	410	0.6%
Sub-total: Urban	490	1.2%	2,300	3.2%
Rural				
Rural Residential	0	0.0%	400	0.6%
Agriculture	10	<0.1%	2,180	3.1%
Sub-total: Rural	10	<0.1%	2,580	3.7%
Recreation	12,770	31.0%	13,850	19.7%
Conservation	7,400	18.0%	12,330	17.5%
Resource Extraction	210	0.5%	670	0.9%
Undeveloped/Habitat	1,060	2.6%	18,690	26.5%
Other	170	0.4%	690	1.0%
Reservoir/Open Water³	19,030	46.3%	19,420	27.5%
TOTAL⁴	41,140	100.0%	70,530	100.0%

¹ Includes the Project boundary and non-Project lands adjacent to and within ¼ mile of the Project boundary..

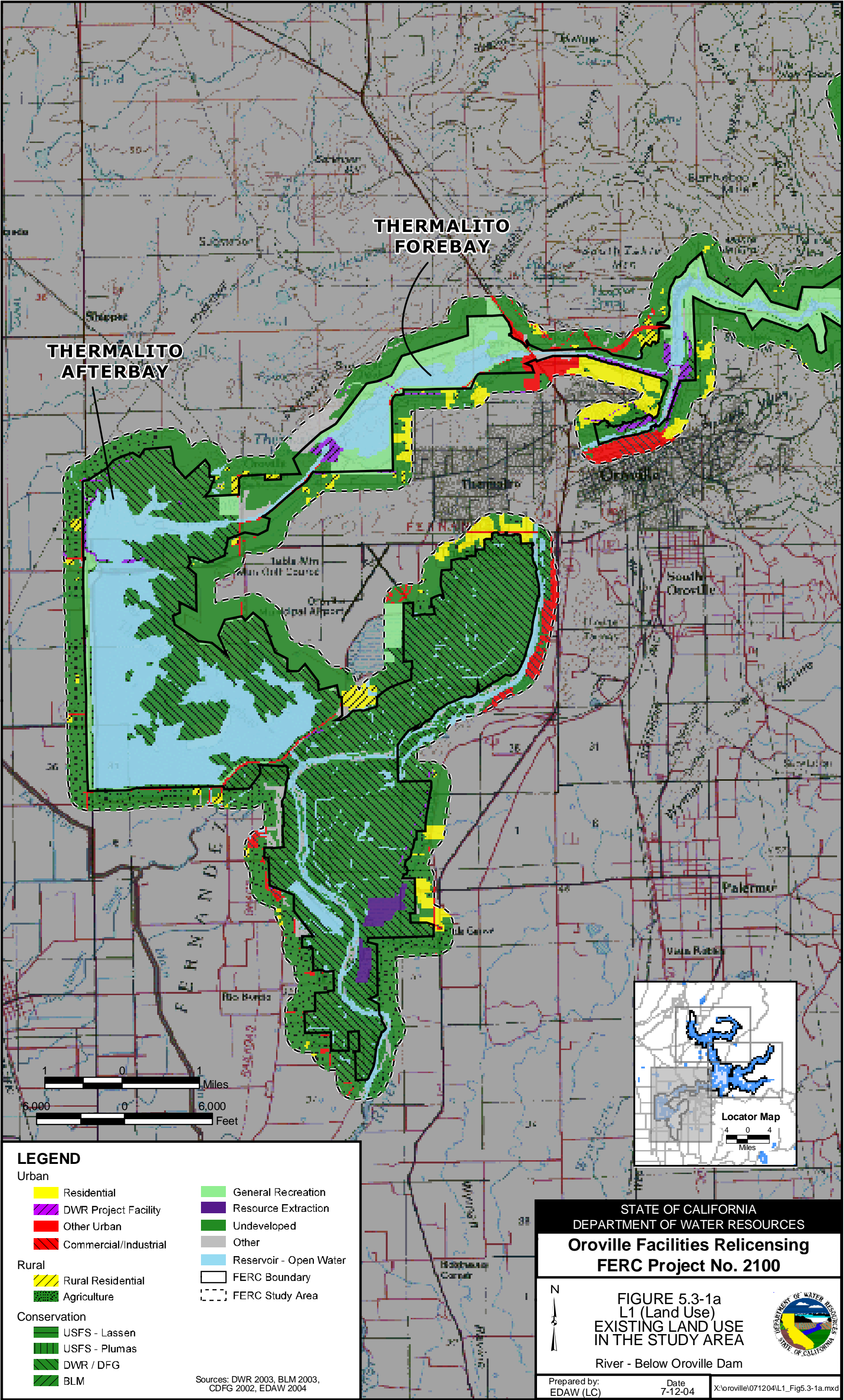
² Acres are approximate and rounded to the nearest 10.

³ Measured at full pool elevation.

⁴ Numbers may not add up to 100 percent due to rounding.

Source: EDAW 2004

>> Add revised Figure 5.3-1a: Existing Land Use in the Study Area.



Revised 5.1-3a (back)

2.2 STUDY L-2 – LAND MANAGEMENT

Table 2.2-1. Errata to L-2 – *Land Management (FINAL)*, dated August 2004.

Report Section	Page	Change
Section 5.1	5-2	Fifth paragraph, 2 nd sentence revise sentence as follows: Despite the DPR and DFG management and maintenance responsibilities, DWR does bear the ultimate responsibility under the current FERC license for ensuring funding, development, and management of current and future recreation facilities required per FERC license conditions.
Section 5.3.1.2 under <i>Management of Oroville Facilities</i>	5-27	First paragraph, 4 th sentence revise as follows: Power produced by the Oroville Facilities helps meets the costs of operating and maintaining the SWP system.
Section 5.3.1.2 under <i>Funding and Oversight of Recreational and Fish and Wildlife Preservation Programs</i>	5-29	Second paragraph, last sentence revise as follows: Though in many cases DWR is not directly involved in the implementation of recreation improvements and programs, it is ultimately DWR's responsibility to ensure that all required studies and improvements required by FERC are properly carried out.
Section 5.3.2.2	5-34	Last paragraph, 1 st sentence revise as follows: Although DPR manages the majority of LOSRA's recreational aspects, DWR bears the ultimate responsibility under the current FERC license for ensuring funding, development, and management of current and additional recreation facilities required by FERC and Feather River Project 2100.
Section 5.3.3.2	5-40	<p>Replace 3rd paragraph with: For the past several years, management conditions at the OWA have been strongly influenced by DFG regional management staff decisions, statewide funding, and personnel shortages. A lack of management personnel and funding is one of the biggest challenges facing the mission of DFG in the OWA. DFG has suggested operating standards of approximately one habitat staff person per 1,000 acres. Based on the DFG suggested standards, prior to statewide funding shortages, the OWA would have been expected to have 12 habitat staff, not including wildlife protection/law enforcement or administrative staff. Prior to March 2004, the 12,000-acre OWA was managed by three habitat staff persons with part-time office staff support and periodically patrolling law enforcement officers.</p> <p>As a result of DFG staffing decisions and due to the size of the OWA, over the last several years, remote areas within the OWA that are accessible by road have been susceptible to illegal activities, such as dumping, fires, and lawless behavior. DFG staff attempted to remove trash and illegally dumped materials from the OWA when possible, although those activities took time away from management objectives. Maintenance needs such as basic road maintenance and posting directional signage and maps for users have been sporadic due to DFG personnel and budget constraints (pers. comm., Atkinson, 2003). The DFG has expressed concerns over the absence of DFG staff patrolling the OWA due to budget constraints. This condition has placed OWA management operations in a more difficult management mode for the past</p>

		<p>several years, where emergency situations are prioritized over operational goals associated with wildlife conservation and recreation in the OWA.</p> <p>Due to further state-wide funding reductions to the DFG, on March 1, 2004, the three DFG staff persons assigned to the OWA were temporarily reassigned to other State wildlife areas with reduced or limited involvement with the OWA. During this interim period, the OWA periodically receives visits from at least one habitat manager for management purposes. DWR's Oroville Field Division has taken over trash removal, restroom maintenance and some general security in the OWA. In addition, the CHP has increased law enforcement activities in the OWA. As of the date this errata sheet (September, 2004), some members of LUWG have noted that general conditions at the OWA have deteriorated over the spring and summer of 2004 due to the staffing reductions. Some LUWG members report increases in general camping violations, illegal activities, and debris and trash accumulations at the OWA. As of this date, it is not known when, or if, the three DFG staff persons will be permanently reassigned to the OWA. It is also not known how the types of management issues that have been mentioned in this section will be consistently addressed, or what management entity will permanently address them if DFG staffing decisions persist and/or funding to the DFG is not restored.</p>
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2.3 STUDY L-3 – COMPREHENSIVE PLAN CONSISTENCY

Table 2.3-1. Errata to L-3 – *Comprehensive Plan Consistency (FINAL)*, dated May 2004.

Report Section	Page	Change
Table of Contents - Section 5.0	i	Change section title to: "SUMMARY OF RELEVANT COMPREHENSIVE AND RESOURCE MANAGEMENT PLANS".
Table of Contents – Section 6.0	ii	Change section title to: "POTENTIAL COMPREHENSIVE PLAN CONSISTENCY ISSUES"
1.1 Background Information	1-1	Change last paragraph (5 th paragraph) on page to read: "Initially approved in July of 2002, a Draft Interim Report was completed in January of 2003. Updates to the Draft Interim Report were incorporated and the Final Report was submitted in May of 2004. The updates include new plans that the LULMAWG was made aware of after issuance of the Draft Interim Report and a section that identified potential consistency issues that might be related to the relicensing effort".
1.1.1 Statutory/Regulatory Requirements	1-2	Change the first sentence of the third paragraph to read: "FERC issues updated lists of comprehensive plans for each state that were considered for Relicensing Study L-3."
5.0 Section Title	5-1	Change title to read: "SUMMARY OF RELEVANT COMPREHENSIVE AND RESOURCE MANAGEMENT PLANS".
6.0 Section Title	6-1	Change title to: "POTENTIAL COMPREHENSIVE PLAN CONSISTENCY ISSUES"

2.4 STUDY L-4 – AESTHETICS

Table 2.4-1. Errata to L-4 – Aesthetics/Visual Resources (*FINAL*), dated July 2004.

Report Section	Page	Change
Table of Contents (Section 5.3.1)	i	Title should be “U.S. Forest Service (USFS)”.
6.1.1.3 Ancillary Facilities	6-4	6 th sentence replace penstocks with “penstock”.
6.1.2.1 Background Operational Information	6-7 & 6-8	<p>Replace the 3rd paragraph on page 6-7 through the first new paragraph on page 6-8 (including Tables 6.1-2 and 6.1-3 that follow this table) with the following:</p> <p>“On average, the reservoir refills during the spring and reaches an elevation of 857 ft by Memorial Day. This elevation is 43 ft below the full pool elevation of 900 ft. The reservoir stays at the 857 ft level through June and begins to decrease in elevation in July. On average, the elevation decreases to 840 ft in July, 823 ft in August, and 802 ft in September. These elevations are 60 ft, 77 ft, and 98 ft below full pool elevation.</p> <p>While average pool elevation data provides a reasonable overall characterization of a reservoir’s average elevation over time, there are very few years that a reservoir’s elevation is actually the same as the overall average elevation. At any given time, reservoir elevation is usually above or below the average, depending on a number of factors such as the amount and timing of precipitation within the Project’s watershed. A better way to assess the aesthetic/visual effects of operations on a project is by examining exceedance data. Exceedance data indicates the probability that a specific pool elevation will be met or exceeded on a specific date, based on the CALSIM model that has been used for the Oroville relicensing project. The CALSIM model simulates hydrologic conditions in the project area and what the Lake Oroville storage capacity would have been (even for the years the reservoir was not actually in place) for the years between 1922 and 1994 based on the actual water demands for the Oroville project for the year 2001. For example, the data from the model depicted in Table 6.1-3 indicates that there is a 90 percent chance of Lake Oroville meeting or exceeding an elevation of 775 ft in any given April. Table 6.1-3 also indicates that during any given April, there is a 50 percent probability that the elevation of Lake Oroville will meet or exceed an elevation of 875 ft, and a 10 percent probability that it will meet or exceed an elevation of 880 ft.</p> <p>The exceedance data displayed in Table 6.1-3 also indicates that April, May, and June would most likely have the highest reservoir elevations. There is a 50 percent</p>

		likelihood that Lake Oroville would be within 25 ft of full pool in April, a 50 percent likelihood it would be within 20 ft of full pool in May, and a 50 percent likelihood it would be within 40 ft of full pool in June. The likelihood of Lake Oroville being within 20 ft of full pool in the summer months of June, July and August is 10 percent.”
6.3.2 Effects of Project Operations	6-34	<p>Replace the paragraph on page 6-34, the summary statement on page 6-35 (including Table 6.3-2 which follows this table) with the following:</p> <p>“The Thermalito Afterbay is a large, shallow, open reservoir that has frequent water level fluctuations and a high surface-to-volume ratio. The Afterbay presents the most complex hydrologic regime of all the Oroville Facilities’ reservoirs. It has multiple outlets that deliver water to several different agricultural canals, an outlet that regulates the amount of water that is discharged through the Thermalito Afterbay outlet into the Feather River, and pump-back operations. The Afterbay has several fluctuation cycles, daily, weekly, and “other”. The Afterbay fluctuates on a daily basis because of the pattern of releases through the power generation facilities; however, releases to the river from the Thermalito Complex typically are steady throughout the day. The amount of daily fluctuation varies depending upon factors such as time of year, diversion rates, release rates, and hydrology. A review of the operations of the Afterbay for 2001 and 2003 provide examples of typical fluctuations that would be expected during most years. (Water year 2001 was extremely dry and was classified as a dry year. Water year 2003 was classified as an above normal year.) For both years typical daily changes in elevation for most months were between 1 and 2 feet, with changes more frequently in the 1-foot range.</p> <p>Weekly fluctuations vary more than daily fluctuations as DWR attempts to fit power generation into particular hours of the week. A common pattern is that the Afterbay is at its low point on Monday and storage is increased over the week to reach a maximum elevation on Saturday. Typically, the Afterbay elevation will drop through Sunday and into Monday morning at which point the cycle frequently starts over. The weekly fluctuations will usually range from 2 to 6 feet although there are times during the year when the Afterbay elevation is allowed to be higher or lower than the usual 2 to 6 foot weekly fluctuation as a response to system wide operations or energy prices. Over the course of a few weeks, the Afterbay fluctuations can be greater than the weekly changes. Fluctuations of approximately 9 to 11 feet sometimes occur during a several week period. Once again, using 2001 and 2003 as “typical” examples of Afterbay storage conditions, these large fluctuations can occur during different parts of year,</p>

		but are most likely to occur in the winter and fall.
		In summary, because the Afterbay only generally fluctuates between 2 to 6 ft (and the resulting exposed mud flats), the reservoir and its operations have a positive effect on the aesthetic/visual environment of areas near the Afterbay (Table 6.3-2). Times when the Afterbay elevations are at the low end of the range are not frequent and generally do not occur during the summer months."

Table 6.1-2. Historic average monthly Lake Oroville elevations.

Month	Reservoir elevation
April	845 ft
May	857 ft
June	857 ft
July	840 ft
August	823 ft
September	802 ft
October	795 ft

Source: DWR 1968 to 2003 (based on daily average)

Table 6.1-3. Lake Oroville exceedance data.

Month	90%	50%	10%
April	775 ft	875 ft	880 ft
May	780 ft	880 ft	900 ft
June	775 ft	860 ft	900 ft
July	750 ft	825 ft	890 ft
August	715 ft	790 ft	880 ft
September	690 ft	775 ft	870 ft
October	680 ft	765 ft	875 ft

Source: DWR Supplied Data Dated from CALSIM model 9/4/2003 (Note that under the CALSIM model, the hydrology is not historic, it is a synthetic hydrology based on the estimated unimpaired hydrology of 1922 through 1994. Current conditions includes a demand on the system (and impairments) akin to 2001, future conditions to 2020).

Table 6.3-2. Summary of the effects of Project facilities and operations on the aesthetic/visual environment of areas seen from KOPs located near the Thermalito Afterbay.

KOP	Effects	Notes
TA-1 (Larkin Road DUA)	Dam = moderately negative effect. Project operations = near high pool elevations have a positive effect, low pool elevations have a moderately negative effect due to exposed mudflats.	Dam seen in middleground
TA-2 (Monument Hill DUA)	Dam = moderately negative effect.	Dam seen in middleground

	Project operations = near high pool elevations have a positive effect, low pool elevations have a moderately negative effect due to exposed mudflats.	
TA-3 (Highway 99)	Dam = negative effect.	Dam seen in foreground.
Total	Operations = Positive to moderately negative Dam = 2 Moderately Negative Dam = 1 Negative	

2.5 STUDY L-5 – FUEL LOAD MANAGEMENT

There are no errata for Study L-5.

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3.0 ACKNOWLEDGEMENTS

DWR and the study report authors are grateful for the innumerable hours devoted by LULMAWG participants in the development of the Study Plans which guided the implementation of the five Land Use, Land Management, and Aesthetics studies. Furthermore, the additional substantial efforts made by many individuals to review the study reports and provide valuable input and comments are appreciated. We are confident that these important and generous contributions have resulted in significantly-improved technical study products than would have been possible without this participation and dedication throughout the study process, from issue development to production of the Final Study Reports.